

# A new species of *Fulgoraria* Pilsbry & Olsson, 1954 (Gastropoda: Volutidae) from the South China Sea

Patrice BAIL

2 square La Fontaine, 75016 Paris, France

pat.bail@wanadoo.fr

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**ABSTRACT.** A new species from the northern part of the South China Sea is described here and compared with related species of the same subgenus *Musashia* Hayashi, 1966.

## INTRODUCTION

Since the comprehensive work of Shikama (1967), the extension of fishing zones and deeper dredging only recently led to the discovery of seven new species: *Fulgoraria* (*Fulgoraria*) *ericarum* Douté, 1997 from Vietnam waters; *F. (Saotomea) minima* Bondarev, 1994 and *F. (S.) pratasensis* Lan, 1997 from the South China Sea; *F. (S.) solida* Bail & Chino, 2000 and *F. (Musashia) chinoi* Bail, 2000 from the southwestern waters of Kyushu (Japan).

## Abbreviation

MNHN: Muséum national d'Histoire naturelle, Paris, France.

Family **VOLUTIDAE** Rafinesque, 1815

Subfamily **FULGORARIINAE** Pilsbry & Olsson, 1954

Genus *Fulgoraria* Schumacher, 1817

Subgenus *Musashia* Hayashi, 1960

Type species *Fulgoraria hirasei* Sowerby, 1912 (by original designation) Recent, Japan.

*Fulgoraria* (*Musashia*) *allaryi* sp. nov.

Figs 1-8

**Type material.** Holotype MNHN, 222.5 x 63.3 mm.

**Paratypes.** 227.4 x 86.8 mm; 228.1 x 84.2 mm; 237.4 x 75.5 mm. All paratypes in A. Allary's collection.

**Other material:** 5 specimens in A. Allary's collection: 240.1 x 71.0 mm; 222.3 x 64.5 mm; 121.4 x 39.9 mm; 103.1 x 38.2 mm; 104.6 x 37.4 mm.

**Type locality.** Northern South China Sea, east of Hainan Island, trawled by shrimpers at a depth of 800-1000 m, on muddy substrate.

**Range.** The exact range is unknown. Since it was only recently discovered, a restricted distribution is suspected.

**Description.** Shell large, up to 240.1 x 71 mm, light but solid, narrowly fusiform with a high spire in most specimens. Surface dull. Rounded protoconch of 2.5 smooth whorls (Fig. 7), deviated at 45° from axis of shell, large for subgenus with an average diameter of 6.0 mm. Teleoconch of 6 slightly convex whorls, sculptured by 16 or 17 almost straight axial ribs well marked on 2 first postnuclear whorls, attenuated on third one and becoming obsolete on body whorl, replaced by growth marks. Ribs crossed by numerous close-set fine spiral grooves, giving surface a faintly cancellated appearance on 3 first whorls. Suture slightly indented without callus deposit. Aperture narrow, forming an average of 56% of total shell length. Outer lip smooth and simple. Columella almost straight, spirally sculptured by growth marks, bearing 4 columellar plaits (Fig. 8), strong anterior one followed by three unequally weaker. Fasciole absent. Background colour uniformly reddish-flesh without any pattern, often stained by chalky or muddy deposits. Protoconch beige. Columellar plaits whitish. Animal unknown.

**Discussion.** According to its features, this species belongs to the subgenus *Musashia* whose diagnosis is an uniform color, a small protoconch, a cancellate sculpture and few (1-4) low columellar plaits (Bail, 2000).

*Fulgoraria* (*Musashia*) *cancellata* Kuroda & Habe, 1950 (Fig. 9) differs by a more rounded outline, a smaller protoconch (average diameter: 2.5 mm), a constant shorter and more convex spire, a more elongated anterior tip, a body whorl strongly sculptured with more numerous sigmoid axial ribs (20-23 on the penultimate whorl, 30-35 on the last one) crossed by more pronounced spiral grooves, giving the surface a dull appearance. Its range (from Shikoku to Kumado-nada, off Mie Pref.) is totally allopatric.

*F. (M.) clara* (Sowerby III, 1914) (Fig. 10) is a smaller and lighter shell (maximum adult size around 90 mm), with fewer axial ribs (14 on the penultimate

whorl), and almost obsolete spiral grooves on the last whorl, giving the surface a lustrous appearance. Its range (from Shikoku to Kumano-nada) is also allopatric.

*F. (M.) noguchii* Hayashi, 1960 differs from the latter by its more inflated outline and supports the same comparison.

*F. (M.) hirasei* (Sowerby III, 1912) (Fig. 11) is also a large shell (adult size up to 190 mm), with rather inflated whorls, sculptured with strong axial ribs (16-18 on the penultimate whorl, 20-22 on the last one), crossed by very attenuated spiral grooves giving the surface a next-to-glossy appearance. The suture is covered by a callus. Its range (from Shikoku to Enshu-nada, off Shizuoka Pref.) is also allopatric.

*F. (M.) formosana* Azuma, 1967 (Fig. 12) from Taiwanese waters is a quite different small shell, with a minute, axially straight, white protoconch bearing a calcarella, nodulose axial ribs and a cream colored glossy surface.

*F. (M.) chinoi* Bail 2000 (Fig. 13) is the closest relative, sharing the same outline and roughly the same appearance. It differs by its smaller size (max. length 150 mm) and protoconch (average diameter of 4-5 mm), more numerous axial ribs (15-17 almost straight axial ribs on the penultimate, and 23 or 24 extending onto the last whorl). Its range (west coast of Kyushu, from Cape Nomo to Kuroshima) is allopatric.

**Remarks.** Adult size varies from 150 to 240 mm. Apart from some minor difference in spire length, all the specimens examined show no noticeable variation.

**Etymology.** This species is named in honor of Mr. Alain Allary, a well-known conchologist who

entrusted these specimens to me for study and gave the holotype to the MNHN.

**Conclusion.** *Fulgoraria (Musashia) allaryi* sp. nov. shows a close relationship with its relatives from the subgenus *Musashia*, and particularly with *F. (M.) chinoi*. Taxonomic connection between these two species can be debated, but the unusual (for the subgenus) large size and the broad rounded protoconch of *F. (M.) allaryi* preclude any confusion with any other *Musashia* species. It is the first occurrence of a species of this subgenus in this area. The recent extension of deep water trawlings by Chinese shrimpers will be probably the source of new discoveries.

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#### REFERENCE

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#### Figures 1-13

1-8. *Fulgoraria (Musashia) allaryi* sp. nov., China Sea, east of Hainan Island.

1-3. Holotype MNHN, 222.5 mm; 4-5. Paratype coll. A. Allary, 227.4 mm; 6. Paratype coll. A. Allary, 228.1 mm; 7. Protoconch (x 2.6); 8. Detail of the columella (x 1.2).

9. *F. (M.) cancellata* Kuroda & Habe, 1950, Shikoku, Japan, 108.2 mm; 10. *F. (M.) clara* (Sowerby III, 1914), Kumano-nada, southern Honshu, Japan, 96.1 mm; 11. *F. (M.) hirasei* (Sowerby III, 1912), Kumano-nada, southern Honshu, Japan, 198.3 mm; 12. *F. (M.) formosana* Azuma, 1967, Taiwan, 102.6 mm; 13. *F. (M.) chinoi* Bail, 2000, Kuroshima, southern Kyushu, Japan, 126 mm.

